We claim:

1. A peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

2. A peptide of claim 1 wherein

X_2 is selected from the group consisting of L, E, K, P and N;

X_3 is selected from the group consisting of H and A or no amino acid;

X_4 is selected from the group consisting of D, N, E, Q, and H;

X_5 is selected from the group consisting of N, G, S, and R;

X_6 is selected from the group consisting of K and D;

X_7 is selected from the group consisting of N, K, S, E, M, I and Q;

X_9 is selected from the group consisting of T and A;

X_{10} is selected from the group consisting of V, A, L, F and I;

X_{11} is selected from the group consisting of Q and S;

X_{12} is selected from the group consisting of E and T;

X_{14} is selected from the group consisting of L, Y, I, A, F and C;

X_{15} is selected from the group consisting of Q, L, K and E;

X_{16} is selected from the group consisting of A, T, I and V;

X_{17} is selected from the group consisting of R, H, N and K;

X_{18} is selected from the group consisting of Y, F, I, L and Q;

X_{19} is selected from the group consisting of Q, V, I, H, S, T and M;

X_{20} is selected from the group consisting of E, K, N, G, D, S and Q;

X_{21} is selected from the group consisting of K, N, D, R and I;

X_{22} is selected from the group consisting of Y, K, L, F and H;

X_{23} is selected from the group consisting of N, K, G and Q;

X_{25} is selected from the group consisting of C, Y and no amino acid; and

X_{26} is selected from the group consisting of M, T, L, I and no amino acid.

3. A peptide of claim 1 wherein X_1 is valine; X_2 is leucine; X_3 is histidine; X_4 is glutamic acid; X_5 is glycine; X_6 is lysine; X_7 is asparagine; X_8 is valine; X_9 is threonine; X_{10} is valine; X_{11} is glutamine; X_{12} is glutamic acid; X_{13} is leucine; X_{14} is leucine, tyrosine, isoleucine or phenylalanine; X_{15} is lysine; X_{16} is alanine

or isoleucine; X_{17} is lysine; X_{18} is tyrosine; X_{19} is glutamine, valine or threonine; X_{20} is aspartic acid; X_{21} is lysine; X_{22} is lysine; X_{23} is lysine; X_{24} is leucine; X_{25} is cysteine; X_{26} is methionine and X_{27} is leucine.

4. A peptide comprising at least one amino acid sequence selected from the group consisting of CMYGGVTEHEGN (SEQ ID NO: 3), CMYGGVTEHEGNGC (SEQ ID NO: 5), KKNVTVQELDYKIRKYLVDNKKLY (SEQ ID NO: 4), CGKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 6), CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLY (SEQ ID NO: 7), and CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

5. A peptide of claim 4 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

6. A peptide of claim 4 wherein the amino acid sequence is a component of a larger molecule of at least 6,000 to 8,000 daltons.

7. A pharmaceutical composition comprising a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y;
in a physiologically acceptable carrier.

8. A pharmaceutical composition comprising a peptide of claim 4 in a physiologically acceptable carrier.

9. A method of inducing serum antibodies that bind at least one staphylococcal enterotoxin or streptococcal exotoxin, said method comprising administering to a mammal, in a physiologically acceptable carrier, an amount of a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO: 29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y;
sufficient to elicit production of said antibodies.

10. The method of claim 9 wherein said peptide is administered at a dose of about 5 micrograms to about 100 micrograms.

11. A method of inducing serum antibodies that bind at least one staphylococcal enterotoxin or streptococcal exotoxin, said method comprising administering to a mammal, in a physiologically acceptable carrier, an amount of a peptide of claim 4 sufficient to elicit production of said antibodies.

12. The method of claim 11 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

13. The method of claim 11 wherein said peptide is administered at a dose of about 5 micrograms to about 100 micrograms.

14. A method of inducing serum antibodies which detect the toxins SPEA, SEA, SEB, and SED, comprising administering to a mammal, in a physiologically acceptable carrier, an immunologically sufficient amount of a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

15. A method of inducing serum antibodies which detect the toxins SPEA, SEA, SEB, and SED, comprising administering to a mammal, in a physiologically acceptable carrier, an immunologically sufficient amount of a peptide of claim 4.

16. The method of claim 15 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

17. A method of inducing serum antibodies which inhibit blastogenesis of human mononuclear cells in the presence of any one of the toxins SEA, SEB, SEC, SEE, SPEA or SPEC comprising administering to a mammal, in a physiologically acceptable carrier, an immunologically sufficient amount of an antibody from a mammal immunized

with a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

18. A method of inducing serum antibodies which inhibit blastogenesis of human mononuclear cells in the presence of any one of the toxins SEA, SEB, SEC, SEE, SPEA or SPEC comprising administering to a mammal, in a physiologically acceptable carrier, an immunologically sufficient amount of an antibody from a mammal immunized with a peptide of claim 4.

19. The method of claim 18 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

20. A method of passively immunizing a mammal against the toxic effects of staphylococcal and streptococcal toxins comprising: administering <u>in vivo</u> an immunologically sufficient amount of an antibody containing composition wherein said antibody is derived from the immunization of antibody producing cells with a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID

NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

21. A method of passively immunizing a mammal against the toxic effects of staphylococcal and streptococcal toxins comprising: administering <u>in vivo</u> an immunologically sufficient amount of an antibody containing composition wherein said antibody is derived from the immunization of antibody producing cells with a peptide of claim 4.

22. The method of claim 21 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

23. The method of claim 20 or claim 21 wherein the antibody composition is administered at a dose in the range of from about 1 mg/kg to about 10 mg/kg body weight of the mammal.

24. The method of any one of claims 9, 11, 14, 15, 17, 18, 20 and 21 wherein the mammal is a human.

25. A nucleic acid encoding a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the

group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

26. A nucleic acid encoding at least one amino acid sequence of claim 4.

27. A nucleic acid of claim 26 wherein the amino acid sequence encoded by said nucleic acid comprises CMYGGVTEHEGNKKNVTVQELDYKIRKYLVDNKKLYGC (SEQ ID NO: 8).

28. A host cell containing the nucleic acid of claim 25.

29. A host cell containing the nucleic acid of claim 26.

30. A method of inducing serum antibodies that bind staphylococcal enterotoxin and streptococcal exotoxin comprising administering to a mammal, in a physiologically acceptable carrier, a nucleic acid of claim 25 which produces an immunologically sufficient amount of the encoded peptide to elicit said antibodies.

31. A method of inducing serum antibodies that bind staphylococcal enterotoxin and streptococcal exotoxin comprising administering to a mammal, in a physiologically acceptable carrier, a nucleic acid of claim 26 which produces an immunologically sufficient amount of the encoded peptide to elicit said antibodies.

32. An antibody made by the method of any one of claims 9, 11, 14, 15, 17, and 19.

33. A method for detecting the presence of staphylococcal or streptococcal toxin in a sample comprising contacting said sample with an antibody of claim 32 and detecting the antibody bound to said toxin.

34. A method for detecting the presence of antibodies to staphylococcal or streptococcal toxins in a sample comprising contacting said sample with a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y;
and detecting the peptide bound to said antibodies.

35. A method for detecting the presence of antibodies to staphylococcal or streptococcal toxins in a sample comprising contacting said sample with a peptide of claim 4 and detecting the peptide bound to said antibodies.

36. A kit for detecting the presence of staphylococcal or streptococcal toxins in a sample comprising an antibody of claim 32.

37. A kit for detecting the presence of antibodies to staphylococcal or streptococcal toxins in a sample comprising a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20},

X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

38. A kit for detecting the presence of antibodies to staphylococcal or streptococcal toxins in a sample comprising a peptide of claim 4.

39. A method of inhibiting blastogenesis of human mononuclear cells in the presence of any one of the toxins SEA, SEB, SEC, SEE, SPEA or SPEC comprising administering to a mammal, in a physiologically acceptable carrier, an effective amount a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

40. A method of inhibiting blastogenesis of human mononuclear cells in the presence of any one of the toxins SEA, SEB, SEC, SEE, SPEA or SPEC comprising administering to a mammal, in a physiologically acceptable carrier, an effective amount of a peptide of claim 4.

41. The method of claim 40 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGN (SEQ ID NO: 3).

42. A method of inhibiting blastogenesis of human mononuclear cells in the presence of any one of the toxins SPEG, SPEH and SPEZ comprising administering to a mammal, in a physiologically acceptable carrier, an effective amount a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

43. A method of inhibiting blastogenesis of human mononuclear cells in the presence of any one of the toxins SPEG, SPEH and SPEZ comprising administering to a mammal, in a physiologically acceptable carrier, an effective amount of a peptide of claim 4.

44. The method of claim 40 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGN (SEQ ID NO: 3).

45. A method of protecting a mammal against the toxic effects of staphylococcal and streptococcal toxins comprising: administering <u>in vivo</u> a therapeutically sufficient amount of a peptide comprising a consensus amino acid sequence selected from the group consisting of $X_{25}X_{26}YGGX_1TX_2X_3X_4X_5N$ (SEQ ID NO:28) and $KX_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}DX_{14}X_{15}X_{16}RX_{17}X_{18}X_{27}X_{19}X_{20}X_{21}X_{22}X_{23}X_{24}Y$ (SEQ ID NO:29) wherein X_1, X_8, X_{13} and X_{24} are each independently

selected from the group consisting of L, I and V; X_2, X_4, X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{12}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} X_{19}, X_{20}, X_{21}, X_{22}, and X_{23} are each independently selected from the group consisting of any amino acid; X_3, X_{25} and X_{26} are each independently selected from the group consisting of any amino acid and of no amino acid; and X_{27} is selected from the group consisting of L and Y.

46. A method of protecting a mammal against the toxic effects of staphylococcal and streptococcal toxins comprising: administering in vivo a therapeutically sufficient amount of a peptide of claim 4.

47. The method of claim 46 wherein the peptide comprises the amino acid sequence CMYGGVTEHEGN (SEQ ID NO: 3).

48. The method of claim 45 or claim 46 wherein the peptide composition is administered at a dose in the range of from about 100 mg/kg to 500 mg/kg body weight of the mammal.

49. The method of any one of claims 39-48 wherein the mammal is a human.